# How to grid enable prostate SPORES DE caTissue Suite v1.1.2 - draft

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# About This Guide

This document details a specific scenario where a custom dynamic extension form is grid enabled for caTissue Suite 1.1.2.

## Purpose

The *How to grid enable prostate SPORES DE* provides details for the following:

- Importing the DE form
- Exporting the DE form
- Generating the caCORE API service
- Correcting the xmi file with Enterprise Architect
- Running Introduce to create the caGRID data service
- Deploying the Dynamic Extension grid service
- Running test queries

## Audience

This guide is intended for technical IT staff. It describes steps involved in importing dynamic extension forms into caTissue and deploying the dynamic extension caGrid service which involves deploying multiple JBoss containers on the same machine, as well as configuring multiple system settings.

## Related Documentation

You can find the latest documentation for the caTissue Suite at the caTissue Documentation Wiki

## Document Change History

| Version Number | Date | Description | Contributor |
|---|---|---|---|
| 1.0 | 7/25/2011 | New document | TBTT Knowledge Center |

## Contacts and Support

| | |
|---|---|
| Knowledge Center Main Page | https://cabig-kc.nci.nih.gov/Biospecimen/KC/index.php/Main_Page |
| Knowledge Center Discussion Forum | https://cabig-kc.nci.nih.gov/Biospecimen/forums/ |
| Knowledge Center Contact | tbpt_kc_support@mga.wustl.edu |

# Importing the DE form

The instructions given below are abbreviated. For more details on the import process please refer to Chapter 5 of the caTissue Suite 1.1.1 Technical Manual

1. Open a command prompt and change the directory to where the caTissue package was unzipped
2. From this directory run the following ant target: *ant -f deploy.xml import_xmi -Dfilename="<path>\PSBINParticipant-3.xmi" -Dhookentity="<HookEntityClassName>" -DmainContainerList="<MainContainerCSVFileName>" -Dpackage="<Package>" -Dcondition="<ConditionCSVFileName>*"
3. Note that the correct path needs to be set along with the proper seperater "/" or "\".

## Exporting the DE form

**Video demonstration of the following steps is available here**

The instructions given below are abbreviated. For more details on the import process please refer to Chapter 5 of the caTissue Suite 1.1.1 Technical Manual

1. Open a command prompt and change the directory to where the caTissue package was unzipped
2. From this directory run the following ant target: *ant -f deploy.xml export_xmi -Dgroupname=PSBINParticipant-3 -Dfilename=<your_path>\PSBINParticipant-3.xmi -Dversion 1.1*

## Generating the caCORE API service

These instructions are taken from a FAQ posted on the TBTT Knowledge Center

1. Copy and unzip the caCORE SDK 3.2 from the following location http://gforge.nci.nih.gov/frs/download.php/1938/caCORE_SDK_321.zip
2. Copy the output file from the *Exporting the DE Form* step to the caCORE_SDK_HOME\models\xmi directory.
3. Modify the following properties in caCORE_SDK_HOME\conf\deploy.properties:
    a. System Properties
        i. j2se_container_home should point to your local install
    b. Project Properties
        i. project_name=PSBINParticipant
        ii. webservice_name=PSBINParticipant
    c. Model Properties
        i. model_filename=PSBINParticipant-3.xmi
        ii. fixed_filename=fixed_PSBINParticipant-3.xmi
        iii. include_package=.*ClinicalAnnotation.*
    d. Database Properties (e.g. db properties as set in the caTissueInstall.properties file)
    e. J2SE CONTAINER PROPERTIES, Set “start_container=no”
    f. Set “disable_writable_api_generation=no”.
    g. For more information on caCORE, refer to the caCORE v3.2 User Guide ftp://ftp1.nci.nih.gov/pub/cacore/SDK/v3.2.1/caCORE_SDK_3.2.1_Programmers_Guide.pdf
4. Navigate to the caCORE_SDK_HOME directory
5. Run "ant build-system"
6. Modify the following two properties from caTissueInstall.properties
    i) caCORE.jBoss.home.dir as path of the jboss where caTissue is deployed.
    ii) caCORE.project.name should be same as project_name you specified deploy.properties
7. Go to command prompt and navigate to <caTissue_installable>/catissue_de_integration_client
8. Run ant copyDeIntegrationWar.
9. Run ant modifyProjectWar.

## Running Introduce to create the caGRID service

The caGRID 1.2 software is a prerequisite for this step. You can download the software from this link and view installation documentation here.

1. Create a new directory for the caGRID service (the output from step 3.b will be saved here)
2. From the caGrid installation directory run *ant introduce*
3. ***See Correcting the xmi file with Enterprise Architect before proceeding***
4. Using the Introduce: Grid Service Authoring Toolkit
    a. Select the Create caGrid Service Skeletion from the menu bar
    b. Introduce STEP 1 - Browse to the directory created in step #1 above
    c. Introduce STEP 2 - Enter the name of the service as "PSBINParticipant"
    d. Introduce STEP 3 - Enter a Java Package for the generated code as "PSBINParticipant"
    e. Introduce STEP 4 - No action
    f. Change the Service from Analytical to Data
    g. Click on the Create button
    h. From the Data Service Configuration dialog box, select the caCORE SDK v 3.2.(1) option and click OK
    i. From the caCORE SDK v 3.2.(1) Style: Create caCORE SDK Backended caGRID Data Service wizard click Next: Client Selection
    j. Click Browse to select the Client Lib Directory. This is located in the <your_caCORE_install>\output\PSBINParticipant\package\client\lib directory
    k. Click Next: Configuration
    l. In the Remote Service URL enter the URL for caTissue. For example: http://localhost:8080/catissuecore
    m. Click Next: Model
    n. **See Correcting the xmi file with Enterprise Architect before proceeding to the next step**
    o. Select Domain Model from File and navigate to the file that was output from the *Correcting the xmi file with Enterprise Architect* step using the Browse button
    p. Select "Fix EA Model" check box and then click o n Browse button and brows to the <your_caCORE_install>.
    q. Enter a Project Short Name: PSBINParticipant
    r. Enter a Project Version: 1.0
    s. Click OK
    t. You might see an Errors dialog at this point related to GME, caDSR and errors parsing the XMI file. It is acceptable to ignore the

error by clicking on the Hide button

u. A pop up will appear.Click on Resolve, a pop up will appear select the xsd from <your_caCORE_install>\output{color:#000000}PSBINParticipant\package\client\conf.Click on ok.
## Click Next: Schemas
## Click the Done button
## The Modify Service Inteface dialog will be displayed
## Click the Save button and Confirm the save.
## This completes the service creation.

h3. Correcting the xmi file with Enterprise Architect

If this step is not done then running introduce will throw an error
# Start Enterprise Architect
# Create a new project called PSBINParticipant.eap and click the Save button
# From the Select Model(s) dialog check Domain Model and click the OK button
# Select Project from the main menu bar and go to Import/Export -> Import Package from XMI
# Navigate to the XMI file exported from caTissue in the Exporting the DE Form section. (e.g. <your_path>\PSBINParticipant-3.xmi) and click the Import button
# Select Yes if prompted to overwrite the current package
# Select Close when the import is complete
# From the Project Browser view right+click on the Logical View
# Navigate to Import/Export -> Export package to XMI file
# From the Export Package to XMI dialog select the desired output directory, enter a value for the File name and click Save.
# From the Export Package to XMI dialog click on Export and then Close.

h3. Deploying Dynamic Extension Grid Services

caTissue Suite v1.2 is grid-enabled wherein all the caGrid queries are routed through a single designated caTissue user account, for example, a caGrid user will not be directly provisioned in caTissue. In a future release of caTissue, one will be able to provision the caGrid users in caTissue.



**Caution**
The single designated caTissue user should be a user with the role Scientist who does not have access to any identified data AND is not a Principal Investigator or Coordinator of any collection protocol. The caTissue instance to which the grid service is going to point, should be deployed on a HTTP JBoss instance. In this release, the grid service is not supported if caTissue is deployed on a secure JBoss instance. Please refer to Chapter 5 - Private Public Data Store of the *caTissue Suite Deployment Guide* for details on how to de-identify caTissue data.

h4. Background

The caTissue caGrid data service requires that a caGrid service (or grid node) is deployed and functioning. Below are detailed instructions for deploying the service but assumptions are made that might not fit your environment or deployment needs. For more information or assistance with deploying the caGrid service, please see the caGrid Knowledge Center. Multiple data services can use one grid node but require separate JBoss containers. Please see the TBTT FAQ on changing the JBoss default ports to run multiple JBoss containers from the same machine. By changing the default ports you can deploy multiple versions of JBoss without port conflicts.

The deployment steps for the caGrid Service are the following:
# Deploy JBoss 4.0.4.
# Deploy Java JDK 1.5.
# Deploy the caGrid 1.2 service (using the caGrid installer will automatically download Ant and Globus).
# Create the secure caGrid service.

The deployment steps for the caTissue data services are the following:
# Delpoy Globus into the JBoss for the desired caTissue service.
# Delpoy and configure the desired caTissue service.
# Start the caTissue service JBoss.

h4. Prerequisites

**Note**
This section is for reference only. This guide assumes a functioning caGrid service deployment on the same machine where one of the caTissue dynamic extension grid services will be deployed. See the caTissue Suite 1.2 Deployment Guide - Chapter 6, Deploying caTissue caGRID Data Service v1.2 for more details about deploying a caGrid service.

|| Software Name || Version || URL || Install Guide ||
| caGrid | 1.2 | http://gforge.nci.nih.gov/frs/download.php/3738/caGrid-installer-1.2.zip |
http://gforge.nci.nih.gov/plugins/scmcvs/cvsweb.php/checkout
/cagrid-1-0/Documentation/docs/installer/caGrid-1-2_Installer_Guide.pdf?rev=HEAD;content-type=application%2Foctet-stream;cv
|
| Globus Toolkit | 4.0.3 | http://gforge.nci.nih.gov/frs/download.php/1334/ws-core-enum-4.0.3.zip |
http://www.globusconsortium.org/tutorial/ch6/ |
| Jboss | 4.0.4 GA | http://labs.jboss.com/jbossas/downloads/ | |

h4. Deploying and Securing Globus

Follow the directions here for securing Globus.

h4. Deploying the Data Service

**Note**
Dynamic Extensions model data services should be deployed on a different grid JBoss than the caTissue grid JBoss instance. If the caTissue service & Dynamic Extensions services are deployed on the same grid JBoss, then only one of the services will work.

# Files that were created from the **Running Introduce to create the caGRID service** step will be referenced as `introduce_output`. Copy the `credentials.properties` file located in the `CATISSUE_HOME/CaTissueSuite_caGrid_Server` to the `introduce_output` **folder.**
# Open the command prompt, and change the directory to the `introduce_output`.
# Update the file `credentials.properties`.(copied from step 1)
|| Parameter Name || Details ||
| `user.name` | caTissue user name to which the caGrid users should be mapped.

**Caution**
The Administrator should ensure that the configured user configured should have a Scientist role in the application. That user should not be Principal Investigator or Coordinator of any collection protocol.

> **Note**
> This caTissue account will expire as per the property settings in `password.expire_after_n_days`. It is highly recommended that you set a calendar alert to notify administrators that this account password will expire in *n* days. The grid service will not be accessible if the account expires.

|
| `password` | Password of the common user to which all the caGrid users will be mapped. |
| `keystoreFilePath` | Description: Path to the keystore file if the caTissue is deployed as HTTPS. This key should match to the key of caTissue web application instance. The path must be separated by `/` (forward slash) character. To generate the keystore file, perform the first step mentioned in the section Configuring JBoss Server to deploy caTissue using HTTPS.
Default Value: N/A
Permissible Value: N/A |

5. After editing the file, copy it to the following:{user.home}/catissueservice where {user.home}
   ...which is the Windows default user directory, for example, `C:\Documents and Settings\srikanth\ catissueservice`. In Unix or Linux, it is the user home directory, for example, `/home/srikanth/catissueservice`.

> **Note**
> This file will have to be copied to the user home of the user under which the JBoss server is going to be run.

1. Update the file `serviceMetadata.xml` as follows:
   - **Location:** `introduce_output/etc`
     - **Locate ns3**: `PointOfContact` affiliation and add in the details for `email`, `firstName`, `lastName`, and `role`. `PhoneNumber` is optional.
     - **Locate ns9**: `ResearchCenter`, `displayName`, and `update` details such as your research center `displayName`, `shortName`, and address information. These details will be used to place the service on the Google map on the Grid Portal Page . Details about the person maintaining the service should also be added under `PointOfContact`.
2. Update the file `service.properties` as follows:
   - #*** *Location**:`introduce_output/`
     The property `cqlQueryProcessorConfig_appserviceUrl` should point to the host and port of the caTissue web application instance in the following format.http\:/host:port/CA/http/remoteService
     ...where the `host` and `port` are the hostname and port number of the caTissue web application, for example, `http\://testserver3.wustl.edu\:8080/PSBINParticipant/http/remoteService`.
3. Update the file `introduce_output/build-deploy.xml`.
   a. Search for line.<property name="jboss.dir" value="${env.JBOSS_HOME}"/>
   b. Replace${env.JBOSS_HOME}
      ...with the folder name of `JBOSS_HOME`, for example, `<property name="jboss.dir" value="/usr/local/jboss-4.0.4.GA/`.
   c. From this folder, run the following commands:>ant clean
      >ant all
      >ant deployJBoss
4. Start the JBoss server.
   a. Open a command prompt.
   b. Change the directory `cd %JBOSS_HOME%\bin`.
   c. Run the command `run.bat -c default`.

> **Note**
> You can verify that the grid service has been successfully deployed by typing the following URL in the browser: `https://<hostname>:<port>/wsrf/services/cagrid/PSBINParticipant`

5. To stop the JBoss server:
    a. Open a command prompt.
    b. Change the directory `cd %JBOSS_HOME%\bin`.
    c. Run the command `shutdown.bat -S`.
    Similarly other Dynamic Extensions & Clinical Annotations model CaGrid services can be deployed by following the same steps from corresponding folder.

## Running the Dynamic Extensions caGrid Test Queries

1. Log in to the grid portal (where the grid node was pointed)
    a. Training portal
    b. Production portal
2. Go to the query builder page
3. Insert your grid service URL (under the select UML class tab)
4.